DOCUMENT RESUME

ED 180 956 SP 015 102

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TITLE Teaching, A Profession for Amateurs? Building Research/Practice Linkages via Informal Field-Based Training Activities for Teachers.
PUB DATE Sep 79
NOTE 21p.; Paper presented at the Canadian Education Association/Canadian Educational Research Association Conference (Winnipeg, Manitoba, Canada, September 24-25, 1979)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS Change Agents; Consortia; *Cooperative Planning; Educational Innovation; *Field Experience Programs; *Inservice Teacher Education; Program Descriptions; *Research Utilization; *Teacher Centers; Teaching Experience

ABSTRACT

Ways of implementing educational innovations produced by research into practice in the schools are considered. It is stated that the most effective tool for accomplishing this is inservice teacher education. The characteristics of an exemplary inservice teacher education program are outlined and discussed. The suggestion is made that teacher centers are potentially the most important link between university- produced research and changed practices in the schools, and that a consortium of university-teacher center-public school would be desirable. (JD)

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TEACHING, A PROFESSION FOR AMATEURS?

Building Research/Practice Linkages via Informal Field-Based Training Activities for Teachers

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A Paper presented at the Canadian Education Association/ Canadian Educational Research Association Conference, "Research and the Classroom Teacher," Winnipeg, Manitoba.

September 24, 25, 1979

SP 015 102

During the 1970's, a flood of new research findings on teaching and learning has become readily available, much of it in research summaries in book form. Some sample volumes are Models of Teaching (Joyce and Weil, 1972), Research into Classroom Processes (Westbury and Bellack, eds., 1971), Psychology of Teaching Methods (Gage, ed., 1976), The Appraisal of Teaching (Borich, ed., 1977), and Research on Teaching (Peterson and Walberg, eds., 1979).

In most fields which call themselves professions, such research would be rapidly integrated into practice, so that maximum benefit could be gained by clients. But the recent history of innovations in education suggests that this is unlikely to happen.

There are several reasons for this: First, much less attention is paid to the human problems of implementing research results in organisations than is paid to producing the research findings. Second, administrators at the district or school level who are committed to and capable of implementing research findings are in very short supply, now as always. Third, the training of teachers is poorly conceptualized and conducted, particularly at the inservice stage. Fourth, institutional provisions for implementing research findings via field-based training programs are almost nonexistent in Canada.

This paper concerns itself with the first three reasons in order to establish a basis for discussing the fourth -- a major shortcoming in educational provisions in Canada, which may ensure that much of what is done in the way of research and development in teaching and learning is most unlikely ever to benefit our schools and students.

Research, Innovation, and Educational Change

Most educators carry, as part of their intellectual baggage, a notion of research and change in schools something like the following:

1. Research, conducted by university professors of education and others, results in "findings" vaguely relevant to schooling;

2. Implementation of this research, in the form of innovations, is undertaken by administrators, often with the help of consultants of one kind or another;

3. Some changes are made in schools, which are generally resisted by school staffs, and are rarely large or permanent in effect.

Of these three activities, research, implementation of innovation, and organizational change, only the first is even modestly well understood.

Generally, those concerned with implementing innovations in schools have seriously underestimated the difficulties involved (Charters, et al., 1973; Sarason, 1971). Work conducted in the last decade has helped to explain some of these difficulties. For example, a case study reported by Gross, Giacquinta, and Berstein (1971) found that an innovation not resisted by members of a school staff was only minimally adopted, because of teacher misunderstanding, lack of motivation, and lack of required capabilities, and because of shortage of required materials and incompatibility of other organizational arrangements with the innovation.

A study of the implementation of differentiated staffing, a popular and promising innovation of the 1970's (Coleman and Wallin, 1971) showed that there were very substantial hidden costs to teachers, which diverted their energies from their main task, teaching (Charters, 1973). Teachers are, of course, often well aware of these costs, and resist change as a consequence.

Klein suggests other bases for resistance to change: "What is often considered to be irrational resistance to change is, in most instances, more likely to be either an attempt to maintain the integrity of the target system in response to real threat, or opposition to the agencies of change themselves" (1966).

Change agents coming into organizations frequently encounter a good deal of hostility. The "alienation of the planners of change from the world of those for whom they are planning ... is one of values as much as it is one of simple information" (Klein, 1966).

To summarize these notions: schools resist change because "any attempt to introduce a change into the school involves some existing regularity" (Sarason, 1971); because of the hidden costs, to be borne by teachers; and because of hostility to outside change agents. Even unresisted changes are often unsuccessful because of lack of motivation, skills, and resources.

Yet some change is often essential: "even the most passive organization is compelled to modify itself from time to time in response to irresistible changes in its environment" (Caplow, 1976). Currently schools and school systems are being forced to adapt to declining enrolments, for example. While hardly comparable in drama, the research on instruction also constitutes a change in the environment to which the schools will have to adapt.

There is a missing term in the planned change literature which gives one portion of the solution to this problem: nowhere in the index of, for example, The Planning of Change (Bennis, Benne, and Chin, 1969) a major collection of scholarship on change, is there any reference to leadership. Yet if relevant research findings are to be implemented in schools, some individuals have to provide leadership. In fact, leadership in organisations is really only necessary when changes are required (Selznick, 1957). Leadership consists of influencing the members of the organisation (Campbell, 1977) to accept change (Lipham, 1964). But leadership in educational organisations is rare (Hemphill, 1964). Most administrators spend most of their time in maintenance and trouble-shooting activities, reacting to problems rather than undertaking planned developmental

work (Wolcott, 1973; Mintzberg, 1973; Duignan, 1979). Hodgkinson (1978) describes this tendency as a "retreat into management", that is into routine functions.

In order to function as implementors of change, administrators must have 1) a commitment to organisational improvement, 2) the ability and willingness to review research literature and extract valid and relevant findings, 3) effective influence over organisational members, and 4) patience and persistence over a period of years. In effect, they must undertake carefully planned developmental activity (Coleman, 1977 , 1979). Caplow maintains that an intelligent emphasis on planning can achieve a "nearly magical enhancement of the manager's personal capability" (1976).

All of the above provides a list of obstacles to change:

1. habit patterns of staff and similar "regularities",
2. hidden costs in time and energy to teachers,
3. hostility to outside change agents,
4. lack of motivation to change (similar to #1),
5. lack of skills and resources,
6. lack of administrative leadership.

Any attempt to build effective research-practice linkages must cope with these obstacles to change.

The Training of Teachers

Any attempt to implement research-based changes in teaching and learning must take into account existing practice, loosely based on preservice training. However, there is considerable disagreement about what teachers do in the classroom (only now being dispelled by careful studies based on observation), and on how they learned to do it. Summarizing recent research, Fuller and Brown (1974) say "Becoming a teacher is complex, stressful, intimate, and largely covert, but in accomplishing this demanding task teachers do not feel helped by teacher education."

Such feelings have been shared in the past by Canadian teachers (see, for example, Rieger and Woods, 1971) and school boards, the employers of teachers, have also been unhappy: between 1967 and 1971 there were 40 resolutions requesting changes in teacher training passed at annual conventions of trustees' associations (Coleman, 1972).

Recent reviews of American research in teacher education have identified some high quality work, and some interesting new directions, but "the amount of dependable information available compared to the amount needed to formulate more effective policies and practices in teacher education is miniscule " (Turner, 1975). Two important new directions concern training effects, and socialization.

What is available on training effects, i.e., the relationship between various kinds of training and teacher success in the classroom, strongly supports microteaching and the minicourses approach which utilized this technique (Turner, 1975).

An excellent early demonstration of the effectiveness of microteaching was provided by Wright, Nuthall, & Lawrence (1970):

> The microteachers advanced considerably in their ability to conceptualize their own and other teaching behaviour and this might provide for them their greatest long-term gain. This led

> them towards an increasing facility in stating specific objectives, pre-determining teacher strategy congruent with these, and evaluating their teaching towards such objectives. It seemed that their teaching showed a more business-like approach and a growing economy of presentation. There was a noticeable shift of concern from content to teaching strategy (Wright, Nuthall, & Lawrence, 1970).

For minicourse development, Borg and associates described their intent thus:

> Our program, therefore, has two related goals. The first and more immediate is to develop and test instructional models that can bring about major changes in specific skills related to effective classroom teaching. Using these models, our second and ultimate goal is to develop a subsystem of teacher education in the area of classroom skills. This subsystem will consist of clusters of thoroughly tested courses built upon the instructional models we have developed" (1972).

The dramatic impact of microteaching on teacher effectiveness has not only been demonstrated by Borg and associates in the minicourse development, but also in a pre-service setting by Limbacher (1968).

Another research effort involves socialization theory. A theoretical framework is provided by Reitman (1973). This research assumes that "In addition to the college-based program of teacher education, there is a hidden 'teacher education program' in the schools composed of the powerful socializing forces which bombard beginning teachers" (Bush and Enemark, 1975). These forces have been theoretically described (Getzels, 1963), and measured (Horowitz, 1968), and apparently contribute to some negative consequences of student teaching (Joyce, quoted in Borg, 1970).

Both these directions emphasize the importance of the field setting, and a good many of the changes taking place in teacher training in Canada do involve reconsideration of the locale of training. In effect, this requires a re-conceptualization of the full training continuum, as recommended by the James

Report on Teacher Training in Britain. This identified three cycles of education and training for teachers: "the first, personal education; the second, pre-service education and induction; the third, inservice education and training" (1972). The report makes it clear that the most important area of training is inservice training, and consequently deals first with it, then with pre-service training and finally with personal education. The most important recommendation is that

> a large expansion of third-cycle provision, to give every teacher an entitlement to regular inservice education and training, is an essential precondition of a more realistic, rational approach to initial training in the second cycle.

The importance of inservice education, as opposed to preservice, is widely accepted. At a recent (1975) International Conference on Education the proposition that "teacher education is, in fact, a continuous or recurrent process of which preservice education is only the initial phase" received enthusiastic and universal support (Porter, 1977, p. 154). Inservice education would appear to have adequate status amongst teachers.

Rather large questions remain, however, regarding which content elements should be dealt with in which locale. For example, is practice teaching the final component of preservice training, or a portion of the induction process? Does professional socialization inevitably occur in schools, and not on campus? Should technical skills be taught on campus, or in schools? Borg and associates comment, in regard to the minicourses they have developed, that "The inservice setting is particularly well-suited to instruction in classroom skills" (1970).

Spillane and Levenson contend that "The place to learn to be a teacher is in a school" (1976), and Smith believes that this is in fact what happens: "The teacher learns to teach in the public school, and he learns then largely by trial and error and self-instruction" (quoted in Bush and Enemark, 1975).

Such views considerably augment the importance of fieldbased training, or in-service education, while requiring a rethinking of preservice training, which becomes preparation for self-education.

Field-based Training for Teachers

Field-based training, generally known as inservice education, or professional development, has suffered from four interrelated problems: disputes over control, confusion over objectives, inadequacies of programs, and resource limitations.

The control issue is part of the larger struggle for control of teacher education and certification (for U.S. experience, see Bush & Enemark, 1975). The major parties in this largely unpublicized struggle are ministries, teacher associations, universities, and to a lesser extent, school districts. Each has a rational case, and some resources; none can demonstrate clearly both competence and resources to conduct training.

Ministries have traditional responsibilities such as certification, but by and large have neither money or expertise for the work. Teacher associations have very little money, since negotiations activities often consume most of the budget, but may well have expertise, and do have in general the confidence of the clients. Universities do have expertise, but do not have money, and have in most instances become badly isolated from the field, so that they have little credibility. School districts have the money, although it may not readily be allocated for this function. They may also have the information about needs not available to other organizations. But they lack, in most instances, expertise in training, the confidence of the clients because of the paranoic fear of evaluation pervading teaching, that most insecure of all professions.

A common solution to this problem is the notion of consortia, in such forms as the "professional centre" in the James Report, the Teacher Education Centres in the U.S. or the Teacher Centres becoming common throughout Great Britain and North America. These consortia bring together the various resources of the parties in what is at first sight a logical response to a variety of problems. The control question is answered in such consortia in a variety of ways, and with a range of emphasis on interdependence. A sample hierarchy of possible agreements and levels of cooperation is provided by Houston and Howsam (1972). These are uneasy partnerships, however, and the ponderous nature of decision-making in some of the parent bodies, the different needs of the parties; and the problem of funding may destroy consortia rather rapidly.

For the control of teacher education to remain, in general, with the colleges and departments of education, and leave teachers and school districts powerless, seems an unlikely solution at this point (Spillane & Levenson, 1976). More widely distributed control seems inevitable. Recent university experiments, in various provinces, seem to have demonstrated the possibility of cooperative, field-based ventures in teacher training (e.g., Deines, 1973), and innovative training designs are frequently proposed (see, e.g., Crittenden, 1973). Just as in the U.S., (see Spillane & Levenson, 1976), Canadian educators may have to develop four-way partnerships to design satisfactory training, both preservice and inservice.

The objectives of inservice education are typically established by a "needs assessment", which in this context almost invariably means a survey of the trainees. But such surveys generally reveal, on careful analysis, that teachers are not well-informed about their needs. They cannot easily identify deficiencies in their practice (although self-appraisal techniques can be

taught; see Allen et al., 1970). They are often not aware of alternatives in practices, programs, or materials; and they certainly have very little time to read research. Thus, one major objective of inservice work is assisting teachers to identify needs, and liaison with the normal supervision practices becomes essential, if these are appropriately diagnostic and objective.

With regard to programs, there are two main types, which can be described as general-interest, and behavioral change. The former provide information on such topics as new programs and materials, and are typically one-day, without follow-up or very intensive participation. The behavioural change programs have the intent of changing teachers' practice. Unfortunately, the behavioural programs are not likely to be as popular as the general-interest programs, which in most cases will have no effect on instruction (see Brown, 1968; Hunkler, 1971; Smith, 1969; Spradlin, 1972; and Whitmore, 1974). The behavioural change programs are hard work, they are longer, and they are inherently threatening because they begin by demonstrating inadequacies. However, they sometimes meet Bush's conditions for an effective inservice program:

1. sufficient time to engage in the program;
2. conditions such that the program can be conducted with the necessary materials and supplies at hand;
3. a program that is relevant to the problem undertaken;
4. the necessary financial and other types of support required to carry it out; and
5. an opportunity to use the results of the training in the regular school situation (1971, p. 56).

Fortunately, there is some evidence that teachers are ready for more serious inservice work, aimed at developing teaching skills, as indicated by the following:

1. Teachers rated longer-lasting, more expensive activities higher than others (Filep, 1971, p. 3).

2. A recent five-state study conducted by the Iowa Centre for Research in School Administration disclosed that . . . teachers overwhelmingly indicated that their chief desire from inservice education programs was to improve their teaching skills (Pasch, 1974, p. 1).

> 5. The success of a long-term, detailed, clinical inservice program in New England, involving nearly 400 teachers over three years (Wilson, 1972). But note that instructional outcomes were not measured directly (p. 72).

Both control problems and program objective and content issues are not impossible barriers to improved field-based training. The resource problems may be. Meade's 1971 criticism still applies:

> the existing provisions for inservice education are grossly inadequate. They suffer from three predominant and interrelated weaknesses: (1) time is not available on a regular and systematic basis for teacher retraining; (2) insufficient money is spent on retraining; and (3) an efficient method of retraining has not yet been devised.

His solutions remain appropriate:

> there are three essential steps that must be taken. First we must acknowledge the great importance of teacher inservice education and assign it high priority in the administration of schooling. Second, having acknowledged need and priority, we must design and initiate new organizational procedures with which to pursue teacher improvement. And third, we must create a new management role -- that of a training specialist -- to insure that these procedures are carried out efficiently.

The reasons for the high priority of inservice education, in the context of this paper, are dual: generally it must facilitate the self-education efforts of teachers, and specifically it is the primary, and perhaps only, means by which most teachers can become aware of relevant research. Given that new graduates of teacher training institutions, traditionally a source of innovation, are not likely to be available to schools in large numbers, it becomes clear that if the available research is to be translated into improved programs for children, it will have to be done by teachers presently in the classroom, who will have to learn about the research via improved inservice education programs.

Redesigning Inservice Education

Meade's "new organizational procedures" for inservice work will probably take the form of teachers' centres, "one of the hottest educational concepts on the scene today", (Schneider & Yarger, 1974), and one which has received teacher association support, college support, and Federal funding in the U.S. (Feiman, 1977), as well as considerable support in Canada (see, e.g., Coleman, 1975). The operational centres are quite diverse (see DeVaney & Thorn, 1975) but a categorization into behavioral, concerned with skills training and teaching behaviors; humanistic, concerned with teachers' self-defined needs; and developmental, concerned with higher levels of professional functioning, probably includes most centres (Feiman, 1977).

Teachers' centres are a world-wide phenomenon (Hapgood, 1975, p. 12) of recent origin, initiated in Britain. For enthusiasts in the U.S. and Canada, the British experience is a source of optimism: some 700 were created in 12 years; "most Local Education Authorities clearly regard centres as a valuable asset to be maintained even in a time of economic stress"; and "centres will play an important part in in-service education" in Britain, despite some current difficulties (Burrell, 1976). It is worth pointing out that the committee which prepared the James Report (1972) with its stress on the inservice phase of teacher training was influenced by the development of teachers' centres (Redknap, 1977).

Early research results, deriving from evaluations of teacher centres in the U.S. suggest that teacher centres do in fact provide experiences which help teachers change their teaching behavior. Both self-report and observational studies, in a number of locales, support this generalization (Lickona & Hasch, 1976).

However, to this point they have probably not demonstrated high potency as internal change agencies for school districts, when major change efforts are being undertaken. Some centres are so conceived as the chart illustrates.

Program Development Via A Teacher Centre: Elements and Processes

PROGRAM DEVELOPMENT	PROCESSES			
	NEEDS ASSESSMENT	OBJECTIVES DEVELOPMENT	IMPLEMENTATION PROCEDURES	EVALUATION
1. CURRICULUM REVISION AND CREATION	Review claint, or societal needs currently being met, or seen as relevant to a possible new program.	Develop curriculum objectives that seem likely to meet the needs.	Develop or acquire course descriptions which seem likely to serve the objectives and arrange a pilot project.	Assess the degree of relevance of the objectives to the needs, and the degree of success of the materials in meeting the objectives. Recycle as necessary.
2. INSTRUCTIONAL METHODOLOGY REVISION	Review teachers' needs for changes in methodology consequent on program changes.	Develop requirements derived from educational goals and curriculum objectives.	Provide in-service programs, on a trial basis, for instruction in the methods and techniques derived.	Assess the usefulness of the methods & the success of the in-service programs, in meeting the needs of teachers and intructional requirements.
3. INSTRUCTIONAL MATERIALS DEVELOPMENT	Assess needs for materials to supplement existing instructional materials.	Develop objectives to guide in materials acquisition, in particular orders of priority.	Acquire sample instructional materials for the use of teachers, & arrange displays.	Assess the use made of materials, the validity of the priorities established and the acceptance of some of the materials.
4. TEACHER SELF-IMPROVEMENT	Review teachers' knowledge of and needs for self-appraisal and self-improvement.	Develop a series of self-improvement objectives which might be usable by individuals.	Develop or acquire in-service programs and instructors useful to teachers.	Assess the success of the programs in meeting needs of teachers.

(from Coleman, 1975)

But teachers centres, at their best, have considerable potential as agencies for change: they tend to be district-financed, and do have administrative support, often the missing elements in even well-conceived change efforts (see, e.g., Robinson, 1968). They also may be able to surmount the six obstacles to change listed earlier. They tend to attract more innovative, less habit-bound teachers, they provide group stimulation and sometimes professional staff time to assist with hidden costs and lack of motivation, they are not outside change agents, and they supplement and enrich existing skills and resources.

In addition, Meade's third requirement, the creation of a training specialist role, may be implicit in the role of teacher centre director. The key elements of this role may be:

1. the ability to bridge the gap between administrator demands for accountability and the teacher supervision process on the one hand, and teacher needs and anxieties on the other;

2. the ability to act as a kind of resource linker, "someone who knows about resources, knows about people's needs, and knows how to bring clients and resources together" (Havelock, 1973); and

3. the political expertise to cope with control and resource problems, and in particular, to hold together the various parties (teacher associations, boards, faculties and administrators) whose cooperation is essential to the success of centres.

No doubt this is a larger role than Meade had in mind. But it can provide a source of change-oriented administrative leadership.

Given more field-based emphasis in preservice education, centres could become a critically important linkage. In the United States, Fantini expects that a "competency-based field-centred approach to teacher education will be emphasized and will lead to the development of a network of clinical centres based on

close college and public school collaboration" (1973).

Teacher centres are already serving as the focus for inservice portions of the training continuum. Relatively minor shifts in function could convert them into training centres (see Fantini, 1973, for a detailed description). They may be either "independent alternatives to conventional modes of teacher education" (Rogers, 1976) or elements in a cooperative effort to transform teacher education. There are good examples of such efforts (e.g., Collins, 1970) in the United States.

The consortium notion is one major dimension of current thinking on teachers' centres; it sees "a local school district, college of education, and perhaps state department of education, collaborating to meld preservice and inservice education in a new field-based institution that can make preservice more practical, inservice more challengingly intellectual, professional credential more realistic, educational research more relevant, and professional performance more accountable" (DeVaney, 1976). This is a large mission, but expresses both needs and hopes succintly.

Teachers centres are potentially, and in some cases actually (see, e.g., Coleman, 1979) serving as research-practice linkages by providing informal field-based training activities for teachers. If further developments are to take place, it will probably be because researchers, university-based and otherwise, see the potential of centres as institutional linkages, and develop consortia arrangements, in which skills, knowledge and resources are added to those already available in centres. No other form of linkage available currently has such potential for improving instruction by the implementation of research-based change.

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